

ETHYLENE DIBROMIDE (EDB)

Also known as: Dibromoethane, Soilbrom, Dowfume, Bromofume, KopFume, Nephis
Chemical reference number (CAS): 106-93-4

WHAT IS EDB?

The U.S. Environmental Protection Agency (EPA) considers EDB an extremely hazardous chemical. In 1948, EPA registered the chemical for use as an insect killer. EDB is a clear heavy liquid, with a sweet fragrance. EDB was used to control insects in stored products, on fruits and vegetables, in flour mills, and in soil. EDB was also used as an ingredient in gasoline. In 1984, EPA stopped all agricultural uses of EDB because exposure was found to make male workers sterile. EDB is very poisonous and is shown to cause cancer and reproductive problems.

Most EDB in the environment results from its use in gasoline and from improper waste disposal.

HOW ARE PEOPLE EXPOSED TO EDB?

Touching: EDB passes very easily through skin. Workers have been exposed while making leaded-gasoline products. People may be exposed if they touch the chemical, touch contaminated soil, or bathe with contaminated water.

Drinking/Eating: People may be exposed to EDB if they drink contaminated water or eat contaminated food. People who handle contaminated soil may be exposed when they eat or touch their mouths with dirty hands.

Breathing: EDB can enter the body when people breathe its vapors. People using EDB-contaminated water for household purposes such as washing or bathing may inhale small amounts of EDB evaporating from contaminated water into the air.

Past exposures may have occurred as soil and food products were treated with EDB to remove insects. People may have breathed vapors, touched the chemical, or ate foods with trace amounts on the surface.

DO STANDARDS EXIST FOR REGULATING EDB?

Water: The state and federal drinking water standards for EDB are both set at 0.05 parts per billion (ppb). We suggest you stop drinking water containing more than 0.05 ppb of EDB. If levels of EDB are very high in your water, you may need to avoid washing, bathing or using the water for other purposes. Contact your local public health agency for more information specific to your situation.

Air: No standards exist for the amount of EDB allowed in the air of homes or workplaces. Because of its danger, we recommend no EDB be permitted in the air of homes.

The Wisconsin Department of Natural Resources regulates the amount of EDB that can be released by industries.

WILL EXPOSURE TO EDB RESULT IN HARMFUL HEALTH EFFECTS?

The following health effects can happen immediately or shortly after exposure to high levels of EDB in the air:

- Severe burning or irritation of eyes, nose, throat and skin
- Generalized weakness
- Vomiting, loss of appetite, diarrhea, abdominal pain
- Chest pain, coughing
- Coma

The following health effects can occur after several years of exposure to EDB:

Cancer: EDB is classified as a human cancer causing chemical. Exposed laboratory animals developed tumors at many sites including skin, lung, nose, stomach and liver. Their cancer rates increased after breathing, eating and having EDB put on their skin. It is likely that cancer rates for humans would also increase from these types of exposures.

Reproductive Effects: Studies of laboratory animals show exposure to EDB reduced their ability to reproduce and resulted in damage to the developing fetus.

Organ Systems: Kidney and liver damage may occur after long-term exposure to low levels of EDB.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO EDB?

If you suspect you have been exposed to high levels of EDB, your doctor can do a medical exam and include tests of liver, kidney, nerve and reproductive system functions. These tests indicate whether damage has occurred but may not tell what caused the damage.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: <http://www.dhfs.state.wi.us/eh>



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